



Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

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1 CAACCATTCG AGATCAGTGT GTGAGGGAAC TGCCATCATG AGGTCTGACA
51 AGTCAGCTTT GGTATTTCTG CTCCTGCAGC TCTTCTGTGT TGGCTGTGGA
101 TTCTGTGGGA AAGTCCTGGT GTGGCCCTGT GACATGAGCC ATTGGCTTAA
151 TGTCAGGTC ATTCTAGAAG AGCTCATAGT GAGAGGCCAT GAGGTAACAG
201 TATTGACTCA CTCAAAGCCT TCGTTAATTG ACTACAGGAA GCCTTCTGCA
251 TTGAAATTTG AGGTGGTCCA TATGCCACAG GACAGAACAG AAGAAAATGA
301 AATATTTGTT GACCTAGCTC TGAATGTCTT GCCAGGCTTA TCAACCTGGC
351 AATCAGTTAT AAAATTAAAT GATTTTTTTG TTGAAATAAG AGGAACTTTA
401 AAAATGATGT GTGAGAGCTT TATCTACAAT CAGACGCTTA TGAAGAAGCT
451 ACAGGAAACC AACTACGATG TAATGCTTAT AGACCCTGTG ATTCCCTGTG
501 GAGACCTGTG GGCTGAGTTG CTTGCAGTCC CTTTGTGTCT CACACTTAGA
551 ATTTCTGTAG GAGCAATAT GGAGCGAAGC TGTGGGAAAC TTCCAGCTCC
601 ACTTTCCTAT GTACCTGTGC CTATGACAGG ACTAACAGAC AGAATGACCT
651 TTCTGGAAAG AGTAAAAAAT TCAATGCTTT CAGTTTTGTT CCACTTCTGG
701 ATTCAGGATT ACGACTATCA TTTTGGGAA GAGTTTTATA GTAAGGCATT
751 AGGAAGGCCC ACTACATTAT GTGAGACTGT GGGAAAAGCT GAGATATGGC
801 TAATACGAAC ATATTGGGAT TTTGAATTTT CTCAACCATA CCAACCTAAC
851 TTTGAGTTTG TTTGAGGATT GCACTGTAAA CCTGCCAAAG CTTGCCTTAA
901 GGAAATGGAA AATTTTGTCC AGAGTTCAGG GGAAGATGGT ATTGTGGTGT
951 TTTCTCTGGG GTCAGTGTTC CAAAATGTTA CAGAAGAAAA GGCTAATATC
1001 ATTGCTTCAG CCCTTGCCCA GATCCCACAG AAGGTGTTAT GGAGGTACAA
1051 AGGAAAAAAA CCATCCACAT TAGGAGCCAA TACTCGGCTG TATGATTGGA
1101 TACCCACAGAA TGATCTTCTT GGTCATCCCA AAACCAAAGC TTTTATCACT
1151 CATGGTGGAA TGAATGGGAT CTATGAAGCT ATTTACCATG GGGTCCCCTAT
1201 GGTGGGAGTT TCCATATTTG GTGATCAGCT TGATAACATA GCTCATATGA
1251 AGGCCAAAGG AGCAGCTGTA GAAATAAACT TCAAACTAT GACAAGCGAA
1301 GATTTACTGA GGGCTTTGAG AACAGTCATT ACCGATTCCCT CTTATAAAGA
1351 GAATGCTATG AGATTATCAA GAATTCACCA TGATCAACCT GTAAAGCCCC
1401 TAGATCGAGC AGTCTTCTGG ATCGAGTTTG TCATGCGCCA CAAAGGAGCC
1451 AAGCACCTGC GATCAGCTGC CCATGACCTC ACCTGGTTCC AGCACTACTC
1501 TATAGATGTG ATTGGGTTCC TGCTGACCTG TGTGGCAACT GCTATATTCT
1551 TGTTACAAAA ATGTTTTTTA TTTTCTGTCT AAAAATTTAA TAAAACTAGA
1601 AAGATAGAAA AGAGGGAATA GATCTTTCCA AATTCAAGAA AGACCTGATG
1651 GGGTAATCCT GTTAATTCCA GCCACATAGA ATTTGGTGAA AACCTTGCTA
1701 TTTTCATATT ATCTATTCTG TTATTTTATC TTAGCTATAT AGCCTAGAAT
1751 TCCATGATCA TGAGGTTGTG AGTATATCTC ATTCTTTCGT TGCATTTTCC
1801 TAGGTGTGCT TACTCTCTTC TCTCACTTTG TGACACAAGG ACATGAATAC
1851 ATCTAAATTT TCCATTTTCT GATATCACTG TTTCCATGAC GTCATTACTT
1901 CTCTAACCTT AAGTGATAGG GTGACCTGCA ATATGCTGAT TCCTGGTGTG
1951 TGCACAAACA CATGGATGTA AAGAAGTAAA AAATGTAAAA TTCACAAAAT
2001 TCAGTAAACC ACACAAATCA ATGAAGCATT CTATGACATT AGCTTGTTAT
2051 GAGTAACATA ATGATTTTTT TTTTCAATT TAAATAAGCC CTTCTACATA
2101 CCCAGCATTA CTGATCTCAG ACAATGAATT GCTAAAAATG ACGATAGGGC
2151 ATTACACTCA GAATAGTTTG CTATATTTCC ACATACCTCA TCTAGATGTC
2201 ATAGCCTACA TTTCTGCCAT CACTTAACTG ACATTTTTTG TGTGTTCTTG
2251 ATGATAAATA GACAGTTCTT ATTATTGTCC TCAAATAATA AAAGAACTG
2301 AAATTTTCTT ACATAGAGAA AATGTCCATA AGATATTCAA GTTAAACAGA
2351 TTATTTTGAG ATAAGTAACC ATTAGAAATA TGTGATTGTA ATTTCTGATT
2401 TTATAAAATT TTAATTGATA GTACACTTGA TTTAAATGTC TATTCTTTAA
2451 AATGATGAAT ACTCATAATT CTTATCTCTA TAATCAAAA TATAATTTAC
2501 TGTAGAAAAA TAAAGAGATG CTTGTTCTGA AAGTAAAAAA AAAAAAATAA
2551 AAAACACTGT CATGCCGTTA CGTAGCGTAT CGTTGACAGC CCACTGTCAT
2601 GCCGTTACGT AGCATATCGT TGACAGCGAC ACTGTCATGC CGTTACGTAG
2651 CGTATCGTTG ACAGCACTGT CATGCGTTAC GAGCGTATCG TTGACAGCAC
2701 TGTCATGCCG TTACGTAGCG TATCGTTGAC AGCAAAACAC TGTCAGCCGT
2751 TACGTAGCG (SEQ ID NO:1)
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FIGURE 1A

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FEATURES:

5'UTR: 1-37
Start Codon: 38
Stop Codon: 1619
3'UTR: 1622

Homologous proteins:

Top 10 BLAST Hits

	Score	E
CRA 147000022596013 /altid=gi 10438148 /def=dbj BAB15179.1 (AK...	931	0.0
CRA 1000682322899 /altid=gi 5802604 /def=gb AAD51732.1 (AF1752...	795	0.0
CRA 335001098690982 /altid=gi 11436851 /def=ref XP_003547.1 UD...	679	0.0
CRA 18000005226060 /altid=gi 5803213 /def=ref NP_006789.1 UDP ...	677	0.0
CRA 18000005155438 /altid=gi 4507821 /def=ref NP_001068.1 UDP ...	676	0.0
CRA 18000005147363 /altid=gi 6175083 /def=sp P06133 UDB4_HUMAN ...	675	0.0
CRA 18000004953169 /altid=gi 484383 /def=pir JN0619 glucuronos...	674	0.0
CRA 18000005148770 /altid=gi 3153832 /def=gb AAC95002.1 (AF064...	674	0.0
CRA 18000004903910 /altid=gi 4507819 /def=ref NP_001067.1 UDP ...	669	0.0
CRA 18000005164461 /altid=gi 3426332 /def=gb AAC32272.1 (AF081...	668	0.0
CRA 1000682327923 /altid=gi 5881246 /def=gb AAD55093.1 AF180322...	668	0.0
CRA 18000005219476 /altid=gi 8134780 /def=sp Q9XT55 UDBJ_MACFA ...	667	0.0

BLAST dbEST hits:

gi 10971169 /dataset=dbest /taxon=96...	383	e-103
gi 11068678 /dataset=dbest /taxon=96...	234	6e-59
gi 679005 /dataset=dbest /taxon=9606 /...	212	2e-52
gi 3173232 /dataset=dbest /taxon=9606 ...	212	2e-52
gi 3134358 /dataset=dbest /taxon=9606 ...	212	2e-52
gi 10298020 /dataset=dbest /taxon=96...	200	8e-49
gi 11974507 /dataset=dbest /taxon=96...	196	1e-47
gi 11973717 /dataset=dbest /taxon=96...	172	2e-40
gi 12673874 /dataset=dbest /taxon=96...	137	1e-29
gi 10887798 /dataset=dbest /taxon=96...	125	4e-26

EXPRESSION INFORMATION FOR MODULATORY USE:

library source:

Expression information from BLAST dbEST hits:

gi|10971169 Kidney-hypernephroma
gi|11068678 HepG2 cell line
gi|679005 Liver
gi|3173232 Kidney
gi|3134358 Kidney
gi|10298020 Hepatocellular carcinoma
gi|11974507 Normal pigmental retinal epithelium
gi|11973717 Normal pigmental retinal epithelium
gi|12673874 Kidney hypernephroma
gi|10887798 Kidney

Expression information from PCR-based tissue screening panels:

Human fetal liver

FIGURE 1B

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1 MRSDKSALVF LLLQLFCVGC GFCGKVLVWP CDMSHWLNVK VILEELIVRG
51 HEVTVLTHSK PSLIDYRKPS ALKFEVVHMP QDRTEENEIF VDLALNVLP
101 LSTWQSVIKL NDDFFVEIRGT LKMMCESFIY NQTLMKKLQE TNYDVMLIDP
151 VIPCGDLMAE LLAVPFVLT L RISVGGNMER SCGKLPAPLS YVPVPMGTGLT
201 DRMTFLERVK NSMLSVLHFH WIQDYDYHFW EEFYSKALGR PTTL CETVGK
251 AEIWLIRTYW DFEFPQPYQP NFEFVGGLHC KPAKALPKEM ENFVQSSGED
301 GIVVFSLSL FQNVTEEKAN IASALAQIP QKVLWRYK GK KPSTLGANTR
351 LYDWIPQNDL LGHPKTKAFI THGGMNGIYE AIYHGVPMVG VPIFGDQLDN
401 IAHMKAAGAA VEINFKTM TS EDLLRALRTV ITDSSYKENA MRLSRIHHDQ
451 PVKPLDRAVF WIEFVMRHKG AKHLRSAHD LTWFQHYSID VIGFLLTCVA
501 TAIFLFTKCF LFSCQKFNKT RKIEKRE (SEQ ID NO:2)

FEATURES:

Functional domains and key regions:

[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site

Number of matches: 3

1	131-134	NQTL
2	313-316	NVTE
3	518-521	NKTR

[2] PDOC00004 PS00004 CAMP_PHOSPHO_SITE
cAMP- and cGMP-dependent protein kinase phosphorylation site

Number of matches: 2

1	67-70	RKPS
2	340-343	KKPS

[3] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site

Number of matches: 6

1	3-5	SDK
2	120-122	TLK
3	169-171	TLR
4	200-202	TDR
5	435-437	SYK
6	520-522	TRK

[4] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site

Number of matches: 9

1	62-65	SLID
2	141-144	TNYD
3	204-207	TFLE
4	243-246	TLCE
5	258-261	TYWD
6	296-299	SSGE
7	297-300	SGED
8	419-422	TSER
9	435-438	SYKE

[5] PDOC00007 PS00007 TYR_PHOSPHO_SITE
Tyrosine kinase phosphorylation site

FIGURE 2A

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Number of matches: 2

1 122-130 KMMCESFIY
2 136-143 KKLQETNY

[6] PDOC00008 PS00008 MYRISTYL
N-myristoylation site

Number of matches: 4

1 19-24 GCGFCG
2 276-281 GGLHCK
3 373-378 GGMNGI
4 377-382 GIYEA

[7] PDOC00009 PS00009 AMIDATION
Amidation site

338-341 KGKK

[8] PDOC00359 PS00375 UDPGT
UDP-glycosyltransferases signature

354-397 WIPQNDLLGHPKTKAFITHGGMNGIYEAIYHGVPVGVPIFGDQ

[9] PDOC00804 PS01047 HMA
Heavy-metal-associated domain

12-41 LLQLFCVGCFCGKVLVWPCDMSHWLNVKV

Membrane spanning structure and domains:

Helix	Begin	End	Score	Certainty
1	5	25	1.802	Certain
2	157	177	0.765	Putative
3	181	201	0.779	Putative
4	377	397	0.735	Putative
5	491	511	1.931	Certain

FIGURE 2B

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BLAST Alignment to Top Hit:

>CRA|147000022596013 /altid=gi|10438148 /def=dbj|BAB15179.1|
(AK025587) unnamed protein product [Homo sapiens]
/org=Homo sapiens /taxon=9606 /dataset=nraa /length=449
Length = 449

Score = 931 bits (2381), Expect = 0.0
Identities = 448/449 (99%), Positives = 448/449 (99%)

Query: 79 MPQDRTEENEIFVDLALNVLPGSTWQSVIKLNDFVEIRGTLKMMCESFIYNQTLMKKL 138
MPQDRTEENEIFVDLALNVLPGSTWQSVIKLNDFVEIRGTLKMMCESFIYNQTLMKKL
Sbjct: 1 MPQDRTEENEIFVDLALNVLPGSTWQSVIKLNDFVEIRGTLKMMCESFIYNQTLMKKL 60

Query: 139 QETNYDVMLIDPVI PCGDLMAELLAVPFVLT LRISVGGNMERS CGKL PAPLSYVPVPM TG 198
QETNYDVMLIDPVI PCGDLMAELLAVPFVLT LRISVGGNMERS CGKL PAPLSYVPVPM TG
Sbjct: 61 QETNYDVMLIDPVI PCGDLMAELLAVPFVLT LRISVGGNMERS CGKL PAPLSYVPVPM TG 120

Query: 199 LTDRMTFLERVKNSMLS VLFHFWIQDYDYHFWEEFYSKALGRPTTLCETVGKAEIWLIRT 258
LTDRMTFLERVKNSMLS VLFHFWIQDYDYHFWEEFYSKALGRPTTLCETVGKAEIWLIRT
Sbjct: 121 LTDRMTFLERVKNSMLS VLFHFWIQDYDYHFWEEFYSKALGRPTTLCETVGKAEIWLIRT 180

Query: 259 YWDFEFPQPYQPNFEFVGGLHCKPAKALPKEMENFVQSSGEDGIVVFSLSLGFQNVTEEK 318
YWDFEFPQPYQPNFEFVGGLHCKPAKALPKEMENFVQSSGEDGIVVFSLSLGFQNVTEEK
Sbjct: 181 YWDFEFPQPYQPNFEFVGGLHCKPAKALPKEMENFVQSSGEDGIVVFSLSLGFQNVTEEK 240

Query: 319 ANIIASALAQIPQKVLWRYKGKKPSTLGANTRYDWIPQNDLLGHPKTKAFITHGGMNGI 378
ANIIASALAQIPQKVLWRYKGKKPSTLGANTRYDWIPQNDLLGHPKTKAFITHGGMNGI
Sbjct: 241 ANIIASALAQIPQKVLWRYKGKKPSTLGANTRYDWIPQNDLLGHPKTKAFITHGGMNGI 300

Query: 379 YEAIYHGVPVGVPIFGDQLDNIAHMKAKGAAVEINFKTMTSEDLLRALRTVITDSSYKE 438
YEAIYHGVPVGVPIFGDQLDNIAHMKAKGAAVEINFKTMTSEDLLRALRTVITDSSYKE
Sbjct: 301 YEAIYHGVPVGVPIFGDQLDNIAHMKAKGAAVEINFKTMTSEDLLRALRTVITDSSYKE 360

Query: 439 NAMRLSRIHHDQPVKPLDRAVFWIEFVMRHKGAKHLRSAAHDLTWQHYHSIDVIGFLLTC 498
NAMRLSRIHHDQPVKPLDRAVFWIEFVMRHKGAKHLRSAAHDLTWQHYHSIDVIGFLL C
Sbjct: 361 NAMRLSRIHHDQPVKPLDRAVFWIEFVMRHKGAKHLRSAAHDLTWQHYHSIDVIGFLLAC 420

Query: 499 VATAIFLFTKCF LFSCQKFNKTRKIEKRE 527 (residues 79-527 of SEQ ID NO:2)
VATAIFLFTKCF LFSCQKFNKTRKIEKRE
Sbjct: 421 VATAIFLFTKCF LFSCQKFNKTRKIEKRE 449 (SEQ ID NO:4)

>CRA|1000682322899 /altid=gi|5802604 /def=gb|AAD51732.1| (AF175221)
UDP glucuronosyltransferase UGT2A3 [Cavia porcellus]
/org=Cavia porcellus /taxon=10141 /dataset=nraa
/length=530
Length = 530

Score = 795 bits (2030), Expect = 0.0
Identities = 377/530 (71%), Positives = 435/530 (81%), Gaps = 3/530 (0%)

Query: 1 MRSDKSALVFLLLQLFCVCGFCGKVLVWPCDMSHWLNKVL EELIVRGHEVTVLT HSK 60
M K A LLL L C G GFCGKVLVWPC+MSHWLN+K +LEEL+ RGHEVTVLT S
Sbjct: 1 MAPGKLASAVLLLLCCAGSGFCGKVLVWPCEMSHWLNKLTLEELVKGHEVTVLTLSN 60

Query: 61 PSLIDYRKPSALKFEVVHMPQDRTEENEI---FVDLALNVLPGSTWQSVIKLNDFVEI 117
IDY + A FEV+ +P D+ I F++LA+NV+P + WQS L FFV+I
Sbjct: 61 NLFIDYNRHAPNFVEVIPVPTDKNMSENILNEFIELAVNVMPTMPLWQSGKLLQQFFVQI 120

FIGURE 2C

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Query: 118 RGTKMMCESFIYNQTLMKKLQETNYDVMLIDPVIPCGDLMAELLAVPFVLTLRISVGGN 177
L + C + +YNQ+LMKKL+++ YDV++ DPVIPCG+L+AE+L VPFV L+ S+G
Sbjct: 121 TEDLGLNCRNTVYNQSLMKKLKRDSDYDLVLTDPVIPCGELVAEMLGVPFVNMMLKFSMGHT 180

Query: 178 MERSCGKLPAPLSYVPVPMTGLTDRMTFLERVKNMSLSVLFHFWIQDYDYHFWEEFYSKA 237
+E+ CG+LPAP SYVPVP+ GLT RMTF+ERVKN + SVLF FWIQ YDY FW++FYS+A
Sbjct: 181 IEKYCGQLPAPPSYVPVPLGGLTTRMTFMERVKNMVSFVLFDFWIIQQYDYKFWDFQFYSEA 240

Query: 238 LGRPTTLCETVGKAEIWLIRTYWDFEFPQPYQPNFEFVGGLHCKPAKALPKEMENFVQSS 297
LGRPTTLC +GKAEIWLIRTYWDFEFP+PY PNFEFVGGLHCKPAK LPKEME FVQSS
Sbjct: 241 LGRPTTLC EIMGKAEIWLIRTYWDFEFP+PYLPNFEFVGGLHCKPAKPLPKEME EEFVQSS 300

Query: 298 GEDGIVVFSLSGLFQNVTEEKANIIASALAQIPQKVLWRYKGKKPSTLGANTRLYDWIPQ 357
GEDG+VVFSLGS+ +N+TEEKAN+IASALAQIPQKVLWRYKGKKP+TLG NTRL+DWIPQ
Sbjct: 301 GEDGVVVFSLGSMVKNLTEEKANLIASALAQIPQKVLWRYKGKKPATLGPNTRLFWDWIPQ 360

Query: 358 NDLLGHPKTKAFITHGGMNGIYEAIYHGVPVMPVPIFGDQLDNIAHMKAKGA AVEINFKT 417
NDLLGHPKTKAFITHGG NGIYEAIYHGVPVMPG+PIF DQ DN+A MKAKGA AVE+N T
Sbjct: 361 NDLLGHPKTKAFITHGGSNGIYEAIYHGVPVMPVPIFSDQPDNLAGMKAKGA AVEVNMNT 420

Query: 418 MTSEDLLRALRTVITDSSYKENAMRLSRIHHDQPVKPLDRAVFWIEFVMRHKGAKHLRSA 477
MTS DLL ALRTVI D +YKENAM+LSRIHHDQPVKPLDRA FW+EFVM HKGAKHLR A
Sbjct: 421 MTSADLLGALRTVINDPTYKENAMKLSRIHHDQPVKPLDRAAFWVEFVMHHKGAKHLRVA 480

Query: 478 AHDLTWTFQHSIDVIGFLLTCVATAIFLFTKCF LFSCQKFNKTRKIEKRE 527 (residues 1-
527 of SEQ ID NO:2)
AHDL+WFQ++S+DVIGFLL CVA+AI L TKC LFS Q F K K K+E
Sbjct: 481 AHDLSWFQYHSLDVIGFLLACVASAILLVTKCCLFSFQNF I KIGKRIKKE 530 (SEQ ID NO:5)

Hmmer search results (Pfam):

Model	Description	Score	E-value	N
PF00201	UDP-glucuronosyl and UDP-glucosyl transferas	962.0	1.5e-285	1

Parsed for domains:

Model	Domain	seq-f	seq-t	hmm-f	hmm-t	score	E-value
PF00201	1/1	24	525	..	1 507 []	962.0	1.5e-285

FIGURE 2D

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1	TTCTAGAGGG	TTGGAACAAC	TTTCCCTGA	TACATTGCAT	TTTTTTGATA
51	CCTTCAGTAC	ATGTTAAACT	GGCAACCACC	AGTGAACCTT	ACTCTTAAAA
101	TATTAATTTT	TAACCTCTGT	GCTTATATTG	TCATTTCAAC	TCCTTGCTTA
151	GTAACACAA	AACCATTGCA	GATCAGTGTG	TGAGGGAAC	GCCATCATGA
201	GGTCTGACAA	AATCAGCTTG	GTATTTCTGC	TCCTGCAGCT	CTTCTGTGTT
251	GGCTGTGGAT	TCTGTGGGAA	AGTCCTGGTG	TGGCCCTGTG	ACATGAGCCA
301	TTGGCTTAAT	GTCAAGGTCA	TTCTAGAAGA	GCTCATAGTG	AGAGGCCATG
351	AGGTAACAGT	ATTGACTCAC	TCAAAGCCTT	CGTTAATTGA	CTACAGGAAG
401	CCTTCTGCAT	TGAAATTTGA	GGTGGTCCAT	ATGCCACAGG	ACAGAACAGA
451	AGAAATGAA	ATATTTGTTG	ACCTAGCTCT	GAATGTCTTG	CCAGGCTTAT
501	CAACCTGGCA	ATCAGTTATA	AAATTAAATG	ATTTTTTTGT	TGAAATAAGA
551	GGAACTTTAA	AAATGATGTG	TGAGAGCTTT	ATCTACAATC	AGACACTTAT
601	GAAGAAGCTA	CAGGAAACCA	ACTACGATGT	AACGCTTATA	GACCCTGTGA
651	TTCCCCGTGG	AGACCTGATG	GCTGAGTTGC	TTCCAGTCCC	TTTTGTGCTC
701	ACACTTAGAA	CCTTCTTAAG	AGGCAATATG	GAGCGAAGCT	GTGGGAAACT
751	TCCAGCTCCA	CCTTCTATAG	TACCTGTGCC	TATGACAGGA	CTAACAGACA
801	GAATGACCTT	TCTGGAAAGA	GTAAAAAATT	CAATGCTTTC	AGTTTTGTTC
851	CACCTCTGGA	TTCAGGATTA	CGACTATCAT	TTTTGGGAAG	AGTTTTATAG
901	TAAGGCATTA	GGTAAGACAC	TTTTGTTTTA	TTTTTAATTT	AGTTATCAAA
951	AGAAATATTT	TTAAAAATTG	TCATACATTG	TCTATGACAT	ATATATGCAG
1001	GTCAATGAGT	TTTTTTAGAA	AATGTTGTAG	CTGTTTTTCA	TAAAGAAAGT
1051	GTATTTGTTT	TAAGCGTAAG	ATAACCTACT	TTCTTAATAC	CAGTAATATA
1101	CTTAAAAATG	ATCATCAATA	ACTAAGAGAT	TATATTTTGT	ATTTCTCTCA
1151	AATAGCGCAA	ATCAACATCA	CATATTTTTG	AGAATCACTG	ATTGTTAGTC
1201	TGAAATGTTT	AGAAATTTCTA	TTGAAATAAA	ATGCTAATCA	TTATTTTCTC
1251	TCTCATCATG	TATTTAAGAA	AATCTTCAGA	AGGTCTTCTT	TGAATTAATT
1301	TTTCAAGAGT	CATTAAATTG	AACATTTTCT	AGAATTCTTT	AATTTCTTAG
1351	GTGATTACTT	CACAAAAACT	TGAAAAAATA	TTATAAAAAG	TTAAAAAACT
1401	TACGGTCTTG	TGGGGCATAA	GATAGTAGAA	TTTTTACTTT	ACTGATATAC
1451	ACCTATTTGA	CTTATTTTTA	TTTCTTTGCT	TTACTGATAA	AAAGTTGTTT
1501	TGCTTTGCAA	TTTTTCATATA	GTGTGTGATCA	GAGCTGGTCA	ATGCAAGACA
1551	TGTTTTTATC	CAATATGTTT	TGAGAATTAT	GTAGAAACAT	GAAAAAAGGT
1601	ACAATTATAT	CCGACACTAA	AATATTGTTT	AATGTATTCC	AACGAATTCT
1651	TATGCATAGA	CTGTTTCACA	GAACATAAT	TCAGAGGATC	CCAGTTCAAA
1701	TGTCCTTAGC	CTTAGACATG	ATTGAATTTT	ACATATATTG	ATTTGCTTTA
1751	AATAATTTTC	CATTCAAGTA	GCTGTGCCTA	GCTGCAGATA	GCCTACCAGG
1801	CTTTATGGAT	CTAGGTAAAC	AATACAAATC	TCTTGGCCTC	AAGTCTACAT
1851	TCAGATATTA	ATTTAAAGGG	GTACAGCTAT	ATAGAGGTCA	CTGGCAAATT
1901	TTGGTAAAAA	AGGATTATAG	TAAAAGCCCC	CTGACAAGAT	TGAAATTTAA
1951	AATAAAAACAA	AAGTGTATAT	AAAGGGGTGA	AAGAGCATTT	TCCAATAAAC
2001	AAAAGTGGGT	TCTGGCCATG	CATTTCAGAA	TTCCCCAACA	ATTCTTTTAA
2051	AATCATGGAG	CAGCTTGATA	TATAAGAAAT	TCATTTAATA	ACTATATTTA
2101	TTATGTAGCT	CCAACCTACT	AAATTATTGA	TTATTATATA	TTTTATAGAA
2151	TTATCTATTG	TGAGTCTAAA	TCAAGAGTAT	ATATTCAAAC	AACTATAGGA
2201	AAAGGGATAT	CAGTCAATTT	CAATTCAAGG	ATTTATTTCC	ATAAGTGCTT
2251	ACGCACAGGT	GTATTTCAAT	TTATTATACA	TTGCTTTATT	GTCCTTCACA
2301	AAAATTGCAA	TTTACAAATT	AAAGGTTTTT	GAAAACCTTG	AATCAAGCTA
2351	ATCAATTTGG	CGTAATATTT	CCAACAACAA	GTGTGTACTT	TTGACTCTAT
2401	CACATATTGG	CATTTATCAT	GCTTTTTCAA	ATTTTTCATT	GTTATATCTG
2451	TTACGGTGAT	CTGGGATCAG	TGTTCCCTGA	TGGTTACACG	TTTATTAGCT
2501	TGGGGGCACC	TTGATGTGTT	ACAATATAAG	ACAGCAAAC	TAATTATAAA
2551	TGTTGTGCAT	GTACTAACTG	CTCCGCTGAT	TCGTTTCCCC	ATCCCACTTC
2601	TTCTTAGGCC	TCCCTATTCC	CTGAGACACA	GTAATATAAC	ATACAATGAC
2651	TTCTAAATGT	TCCAGTGAAA	AGAAAAGTAG	CAGGTCTCTC	AATTTAAACC
2701	AAAAATATAA	AGGAATAAGT	TTAATGAGTA	CTATAGTTTA	GATATGGTTT
2751	GCTTGACCTT	ACAAAATCCT	GTGTTGAAAT	TTGATCACCA	ATATTGGAGG
2801	TGGGGCTTGA	TGGGAAGTGT	TAGGGTCATG	AGGGTAGATT	CCTTATGAGT
2851	ACATTAATGC	TCTCCCTGGG	GAAATGGGTG	AGTTCGTTCT	CACTCTATTA

FIGURE 3A

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

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2901 GGTCCCAGGA GAGATAATTA TTAAAAAGAG CCAGGAACAT CCACCTTCTT
2951 TCTCTTGCAT ATCTCTCATT ATCTGATCCC TGCACCTGCT GGCTCCCAAC
3001 ATCTTCTTCA ATGAGTGGAG GAAACCAGAG GTCTTCACCA GACACAGATG
3051 TTGGTGCCAT GCCTCTTGTA TACCCTGAAG AATTGTGAGC CAAATAAAAA
3101 CCTTTTTCTT TTACAAATTA GACAGCCTCA GTTATTCCTT TGTAGCAACA
3151 AAAAAAGCCT GGGACAGGCC AAAAATAACA CCATTGCACC AAACAGTTAA
3201 ACAAGATGTG AGTGCAAAGG AAAAGTTTTT GGAGGAAATT AAAAGTGCTA
3251 CTCCAGTGTA CATACAAATG ATAAGAACAA ATAACCATTA TCAGTGCTGA
3301 TATGGAGAAA ATTTTAGTTG TCTGGAGAGA AAATCAAATT AGCTAGCCAG
3351 CTGCACTGAT TCATATCTGT AATCCCAGTA ACTTGGGAGG CTCAGGTGGG
3401 AGAACGGCTT GAGCCCAGAA GTTTGAAGTC CAAGGCTGCA GTGAGCTATG
3451 ATTGCTCCAC TGCACCTCAA CCTAGGTGAT AGAGCAAAAC CACTACCAA
3501 AAAAAAAAAA AAAAAAGAA GAAAAAGAAA AGAAAAAAAAA TTAAACCAAC
3551 CACAACATCA CCTTAGGTTT TGGCATTAGC TAAAAACTAA TACATAGTAA
3601 AGCGTTAACT ATTCAATTGC ATGAAACCTC AGAGAGGAGA GGAAGATGCA
3651 GAAAAAAGA CTGAAGCTAG TAGAGGTGTA CTAATGAGGT TTACAGGAAT
3701 AAATGCCTA CATGATGCAA AAGTTCAATG TGAAGCAATA GGAAGTCATG
3751 CAGAAGACTT AGCTAATATA CTCAGTAAAT GTGGCTACAG TAAACAAATG
3801 ATTTTCAATG TAGACCTAAC AGCCTTCTGT TGAAGAAGA TGCCATTTAA
3851 AACTTTCATA GCTAGAGAAG AGAAGTCAAT GCTTGTCTCT GAAGCTACAA
3901 AAAACAGGCT GAATCTCTTG TAGTGGCTAA TGCAGCTGAT GACAAAGGTA
3951 AAGCCAATGC CCATTTACTT TTTGTAATAA TTATAGAGGA CTCTTAATAA
4001 TTATGTTAAA TCTACTTTCG CTGTGTTATA TCAATGGAAC AACAAGCCT
4051 GGATGATATC ACATTGGTAT ATGACATGGC TTATTGAATA TTTAAGCAC
4101 ACTGTTGAGA CCTATTGCTC AAAAAAGAGG ATTCCTTTCA AAATATTGCT
4151 GCTCATTGAC AATTCACATG GTCAACAAAG GGCTCTGATT AAGATGTACA
4201 GATATTAATG TTGCGCTGCT TGCTATTATT ACATCCATCT TACATGCCAT
4251 GGATCATATA GCCTTGACTT TCAAGTCTTA TGTAAGAAAT ATATTTTGTA
4301 AGGCTATAGC TCTTACTAAT GGGGAAAGTA TATTGAAAAC CTTTTCAAAA
4351 GGATTTTTC TCTAGATT CATTAAGAAC ATTCATGGTT CATGAGAGGA
4401 AGTCAAGATA TTAACATTAA CAAGAGTTTG GAAAAAATTT GATTCTAACT
4451 CTCCTGGATG ATTTTGAGGG ATTGAAGACA TCATGTGAAG AATTAAGTGG
4501 GGATGGGGTG GTCATGAAAA AATAAATAGA ATTATAAGTG GGCCTGAAGG
4551 TTTGTCTAAA TTGCTATAAT ATCATGATAA AACTAAAACC TGTAAAACCG
4601 GTGAGGAGGT GCTTTTTTAA CAGTTACTTT TTATAGATGA ACACAGAAAT
4651 TGGTTTTGTG AGTTGGAATC TTCTCCGAGT GAAAAATGCTA TGAACATTGT
4701 TGAAATGGCT ACAAATGACT TAGAATATTA CACAAAATTA GTAGATAAGG
4751 CAGCATCAAG GTTTGAGAGA ATGGACTCAA ATTTTGAAAG AAATTCTACT
4801 ATGGGTAAAC TGCTGTGAAA CATCATCATA TGCTACAGAG AAATCTTTCA
4851 TGAAAAGATG AGTCAATTCA TGCAACAATC TTTGTTGTCT AATTTTAAAA
4901 ATTGTCCAGC TGCCCTGATC AATCAACAGT AATCAGCACT GAGGCAAGAC
4951 CCTACACCAG AAAAAATAAA AATAAAAAAC CTCACTTGCT GAAGACTCAG
5001 CTTATTATTA GCACTTTTTA GCCATACTTT TAATAAGGT ATGTGCATTG
5051 CTTTTTAAAC GTGATGATAT TGCACAGCTA ATAGCCTACA AGGTATGGTT
5101 AACATAACTT TTATATGTCC TGGGACCCAA ATTTGTGTGA ATCACTTTAT
5151 TGACATATTC CTTTTATTGA GATGAACTGC AACTTATCTT GCAATATCTC
5201 CAAGATATGT GTGATGGCA TTTCAAATAA GATGTGAAAT TATTTTATTA
5251 GTATAAAAAG CAAATTTAAT TTTCTTTTCT TTGATCATCT TTATCCTTGT
5301 TACTGTGTAT TTATCCTTTA AACATTGAAT GACTCCAATT GTTTAAACT
5351 GAGTCTTTCT TAAATGAGTC CTAATATCAT AGTAATTAAA ATCACCTACA
5401 AGTTGGTAAT CAGGCAGCA TGTGAGGCAC AGAAAACAAC AAATTTATAA
5451 GACATAAATG CATTTGCTTG GAAGCTGAGA GAAGGCTCTA TTCTAATTTT
5501 TGATAACTTC AAATGAGTA TCTTCAGTAA AATTTATTCA CTATCAAATT
5551 CAAGGCGTTT GGATTTATGA CCTAGGAAAA AACTTCAAAC ATTAATAATG
5601 GATGACCTTA AAAAGAGGCT CTCCACACTA TGGTGTATAA CACCACCAAC
5651 TTTGATTAGA ATTTTAAAGA GAAACAAATT CTCTTATGGA GTTTATCTTT
5701 TTATCACTTG CAAAATATGT TTTGTAAAG AGATACTAAT TACTTAGTTA
5751 TTTGTAGTTA GCCATTCTTC TGATTAAAAA CCTAAAATTA AATCTTGAAA

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FIGURE 3B

Docket No.: CL000763
 Serial No.: 09/784,340
 Inventors: Ming-Hui WEI, et al.
 Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

5801	ATGTGTTTTC	CTTCAAAACA	CATCATTGTA	GAGAAACACT	AAAGTAAGTG
5851	TATGATTATC	ATAGCATGTA	CATAGGTGCT	TCACAACCCA	AAAAGAATAT
5901	TGTCATGGGT	AAGAATCAGT	AAAGGAATTT	CTCCTAATAA	AACAGTAGCC
5951	TATTAATTAA	AGTAATGATA	TGCAATACAG	CAAGTTAAAG	GGAACGTATC
6001	CTGGTGGGAT	TATTGAAAGA	TATACCCTTG	ACTATAGATT	AGAAAATACA
6051	GAGATGTTAT	TTAGTGAAGA	TATTGTGGTA	CTCATTTATC	ATCTGCAATT
6101	CACTTGCAGA	GGAAAAATG	AGTAATAAAT	TCATTTGCAT	TTTGGATTG
6151	TGTCTTTAAG	TTGTGAAAA	ACACTTAAAT	ATAACCATCT	GTCCTTTGCT
6201	CCTTCCTTCC	TTCTTCTTT	CCTTCCTTCC	TTCTTCTTT	CCATCCTTCC
6251	CTCCCTCCAT	CCTTCCTTCC	TTCTTCTTT	CCTTCCTTCC	TTTCTTCTC
6301	TGTCCTTCTT	CTTTTCTTCC	TTCTTCTTCT	TTTCTTCTCT	TATTATTTCA
6351	TTAATTCCTC	CTTCCATTG	ACGTCTAAAA	GCCATGTTGT	TCTAGAGGAC
6401	TTAAACTTAT	TTTTTCTTCA	ATAGCTTACT	GAAAAATTAG	TGATACAATT
6451	TTTATTTTGA	ATTGTATGCT	AATTCATTCT	GTTATTTCTT	TTATTGAGGA
6501	AGGCCCACTA	CATTATGTGA	GACTGTGGGA	AAAGCTGAGA	TATGGCTAAT
6551	ACGAACATAT	TGGGATTTTG	AATTTCTCTA	ACCATACCAA	CCTAACTTTG
6601	AGTTTGTGG	AGGATTGCAC	TGTAACCTG	CCAAAGCTTT	GCCTAAGGTA
6651	GGACTATTGT	ATTAAAGGAAT	ATTATGTACT	TTATGACATG	ACTTGTTTTT
6701	CCTTGAAAGA	TTACAACCTT	AGTTATAGAA	GGATGATGTT	GAATGTCGTC
6751	TGTTTGCAGC	TCCATATTTA	TTTTCCATGC	CACAGGGGCT	CTTATAGGTG
6801	ATTATATGTC	TTTTCGGTAT	TATATTGAGA	AAGTAGGCAG	AAGAATTTCA
6851	TGATTAGAAT	AGATTTTAAA	ATACTAGTAT	TACAATAGTT	TGGATAATAA
6901	ATTGAATTAA	TAGGGAATTG	GAGCCATGAA	GATCACTAAA	AAGAATGCTC
6951	TAGCCTTTCT	CACAATCAAA	TGCGGCTTAT	GAACAAGGAT	ATTTGTTCATG
7001	ATAGTACAGA	AATAAGCATA	TTTTCATGAG	ACATATTGGA	TATATTCCAC
7051	AGGAGTTGGT	GAGTGAGAGA	AAATAAGTGA	TGAAGGAAGA	CAAAGAATAA
7101	AAGAAAATTT	CAATAAATGG	AAAGTTTAA	TGTTTAAATGA	TAGTGATGAC
7151	TTTTACTCAA	ATAAGTGCTT	AGAAGTCATC	TTGTTTGTGA	TTTATATGAT
7201	GAATTCTGTG	TTGTGACTAT	CCACTTTGAG	CTCGTGAGAA	TGTTAGGTGA
7251	GGTTTAATAA	AAGCCATTG	AGAAAAACAA	GGTTTCAACC	TCTGTGGACA
7301	GAAATCTAAA	TATCGATAGT	TATCAGGACA	AAGTAGAGCT	CATAGAAATA
7351	ATTTTGCAGC	CTGCAGGTTT	GTTTTGGAGT	GAAAAATAAAA	TTGTATACTA
7401	TATTCCTAAA	TCATCAGAGG	AAAAAATTTA	TAGTTCAAGG	AATGTTGAAA
7451	GAAACAATAT	TGAGAAGTAA	AAGTGAGTAA	TAGTTGTTAT	AGTTTTTTTAA
7501	TAGTTTTGTA	AGTATGTCTT	GAGTTCACGT	TCCCAAAAGT	GGCTATTAGC
7551	TCTAGCCTTG	ACCTGACAAG	GTTCTAGGAT	ATTTAGTCAT	GGATGTTTCA
7601	AATCTACCTC	TTACGGGATA	CTTTTATTTC	TGATGAACAG	CCTAATGCCT
7651	AAGTGTGCAA	TCTATACCAA	GATTGTTCTT	ATAGGGAAC	TGTTTACACT
7701	GGAAGACACC	ACTGTGTCTC	TTGTATGACC	TATGTCTTCT	TTATCCCTAC
7751	AAAGGTAACC	ACATTATAGG	AAACCCTGAC	AAGGCCAGAT	GTTATATTTG
7801	TGTTGGTCAA	GTGAGAAAAC	ATGGGAGAAA	CTTAACCAA	CACATAAAAT
7851	AACAGAAACA	GTCTTCTTTG	ACCATTTCCTA	GAGAAAAGAG	TTCAGCATCC
7901	CTTGTAAGGC	CATAGGAAG	AAGAAAATTC	TCTGGGAAAA	GCACATTCAA
7951	CCAATGAATG	GAGACCAAGA	AAGAGAGTGA	GGGATCTATG	TGCCAAAATG
8001	TTAACTGGGA	TCCAGGGTGT	TACCTAGGTG	GGTTTCCAAT	GGGGAACGTG
8051	AATTGGTAGG	TTTAATGCAA	GCAGGCACAA	AGTCCATGGA	GGCATTCCTGA
8101	GACTGAAAGA	TAGTCACTTT	GGCATATCTG	CACAGAATCT	GATCAGTGAT
8151	TCAAGCCCAA	GTAGGCTGTA	TCTAGTTGTC	CTATAGGGTG	GTTACCAGGA
8201	GGCAGTGTGT	AAGTAAAAAT	CCTGACTGAA	CACATTGAGG	AAATGGAAGG
8251	AGGTGGAAGA	TTTTAAACGG	TGTCAGTGTT	GACTAAGACC	TGCTTCTGGT
8301	ATGGAAAATT	CAACTTATAT	TTTAAATGCA	TAGCCAGACA	ACATAAAATT
8351	ATAAGAATTT	ACCACAATAG	CTATGGTAAC	AATACTGGGT	TTACCTATTA
8401	CTACAGAGTG	AAAAGAAAAC	CCTCATTTCC	CATTTTATGG	AAATATAATC
8451	AAAATCCTAT	AAGGAAGGTT	TCAGAGCCAG	TAGGATTTCC	AGAAAAATTA
8501	TTGGTTTTAT	AGTAAGATGT	GTATTGATGA	ATATAATTTT	ATTTATTAAT
8551	TATTAATATC	ACTTTACTTA	CCAGGAAAGT	TATACCAGAA	AACCAAGCTC
8601	TCCTAAGCCA	TGGCATCTGT	ATCTAAAATA	GAAATACAGA	AGGAGAGCTG
8651	ACAATTTCCA	TCATTCTCTA	GGTAATCTCC	CATGCCATTC	TACCTTTTAT

FIGURE 3C

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

8701 TCCCACACTC CCAGTTTTAC ACACACACAC AAACACACAC ACACAAACAC
8751 ACACTCATAG AAATAATCAT AGAAGACATA TTTTAAAAA AGTTAGATCC
8801 ATACAGTAAT AATTTATTAG GTAAAAGCTT TTGTGCTGAT AATTTTACAA
8851 GTTTAATTGA GATATATTTT AGGGCTGTCT TACACTAAAT ATTTATTTTTT
8901 ATTTTTTAAA TTTGACATGT AATAATTGCA CATGTTTAAAG AGAAATGCTG
8951 TGGTATTACA ATACATTTAA ATGTTGTGTA ATAATTACAT CAAGATAATA
9001 AACCCATCAT CTAAATATTT ATCATTTCTT TGTGGTGATA ACATTCAAAA
9051 ACCTCCTTTC TGGCTATCTT GAAATATGTA ATACATTACT ATTAACATA
9101 GTTACCCAAC AACTTAATAT AATAACAGAA CATATTCTTC CAAATTTAAA
9151 CGTTGTATCC ATTGATCCAC CATTTCTCAT TGCCCTCCCT ACTATCTCTT
9201 CAGCCTCTAG TAACCACAAT TCTACTCTCT AATTATATTA TGAATGCATT
9251 TTTTGATTCC ACATATAAGG GATACCATGC TATCTCTGCC TGGATTATTT
9301 CAGTTAACAT TATGCCCTGG AGGTTTCATT ATGTTTCTAC AAATGACAGG
9351 ATTTCAATTCT TTTTTTCCA ATATATATTT AATGAAATGG ATATATATAA
9401 ACATTGGAAG ATGTATATAT ATATATATAT CTCCAGTGGA ATGCTATTGA
9451 GCTATAAAAA AGTTAATATA TAATAGAAAT AAAGCTTATA TATATCTAAT
9501 GGAATGGATA TATATATATA ATGGAATAGA AATATATATC TATACATATA
9551 AACACACGCA ATACACATAT CCATTTCAAT GCATATATAT ATATATAGAG
9601 AGAGAGAGAG AGAGATATTT TCAAATGTGT GTATATATAT CCAATGGAAT
9651 GGACATATAT ATATGTATAT TTTTCCATA TTTTCTTTAT GTATTTCTTC
9701 ATTAATGGAT GTTTAGGTTG ATTCATCCCT TGGGTATATG AATAATGTTG
9751 ATGTAAACAT AGAAGGACAG ATATCTCTAT GACTTCTTAG TTTATTTAAA
9801 TATACACCCA GTAATGGAAG TGCTGTATAA TATGGTAGTT CTATTTTCAT
9851 TTTTGTAGGA ACTACCATAC CGTTTTCCTT ACTAATTGTA CTAATTTGCA
9901 TTCCCTCAA CAGTTTATAA AAGATCTTCT TTCTCTGCAT ACTTCTAGC
9951 ACTTGTTATT TTTGCCTTTT GATAATAGCC ATAACAGGGG TGATGTGATA
10001 TCTCATTGTA GTTTTGATTT GCATTTCCCT GATGATTAGT GATTTTGAGC
10051 ATTTTGTAAT TATACTTCTT AGTCACTGAT AGTCTTCTTT TGAGAAGTGT
10101 CTATTCAGGT CTTTGTCTTA TTTTTAATC AAATTAGTAA TTTATTTTAA
10151 TTGACTGATG TGACTTCTAT GTATATTGA GATAGTAACT TATTGTCAGA
10201 TTCATAGTTT GCAAATATTT TTCATGTTGT GAATTGTCTC TTCACCCGT
10251 TGTTTGCTTC ATTTTCTCTG CACAAGCTCA ATGCTTTGAT ATAACCCATT
10301 TATCTACTTT TCCTTTTGTT GGCTGTGCTT CTGAAGTCCT ATCCAAAAA
10351 ATCCTTGCCCT AGACCAATGT CACAAATCAT TCCTCCTACA GTTCTTCTA
10401 GTAGTTGTAT AATGTTTGGC CTTATATTTA ACTTTGTAAT TCATTTTAC
10451 TTACTTTGTA TATGGTGAGG GATAGAGGTC TAGTTTCATT TTCTGCATGT
10501 GGATATGCAG TTTTCTAGC ACCATTTAGT GAAGAGGTTG CCTTTTTTCT
10551 ATTATGTGTT CTTGGCACCT TTGTCAAAG TCAGTTAGCT GCTATATTCC
10601 TCCATTTGTG TTGTTATAGA GGAACACATG AGACTAGCAA ATTTATATAT
10651 CAAATAGAAT TATTTGAATG ATAGTTCTGC ATACTGTACA AGAAGCACAG
10701 CACTGACTTC TGCTTGGCCT CTGGTAAGGT TCTCAAGATG CTTCCACTG
10751 TGGTAGAAGG CAAACATGAG CTGGTATATG CAAAGGTCTC ATGACAAGAG
10801 AGGAAACCAT AAAGAGGGGA TGTGAGGGAG TGCCAGGTTT TGTAAACAA
10851 CTAGCTCTTC TGGGAACATA TAGAGTAAAA ATTCGCCCTC CAGGCAGGGG
10901 ATTAATCTAT TCATGAGGGA TCTGCTTCCA TGACAAAGGC ACATTCGTGTT
10951 AGATTCTACC CCCAATATTG GGGATCAAAT TTAAACATGA AGTGTGGAGG
11001 GCTCAAATAT CCATACTATG GCAGCAGTAA ATGCATAAAT TTATTTTGTG
11051 GATCTCTATT CTATATAGTA TTGGTGTATG TATCTGTTTT CATGCCACTG
11101 CCATACTGTT TTGGTGATGA TATCTATGCT ATATATGTGT GTGTGTATAT
11151 ATATATTATA TATATGTATA TATGTGTATA TTATATATAT GTATATATGT
11201 GTATATTATA TATATATAAT ACTTTAAGTT TTATATATAT ATAAAATACT
11251 TTAAGTTCAA GGGTACATGT GCAGGATGTG CAGGTCAGTT ACATAGGTAT
11301 ACATGTGCCA TTTTGGTTTG CTGCATGCAT CAACTCATCA TTACATTAGG
11351 TATTTCTCCT AATGCTATCC CTCCACCAGC CACCAACCC CCAACAGGCC
11401 AGGTGTGTGA TGTTCCCCGC CCTGTGTCCA TGTGTTCTCA TTGTTCACTT
11451 CCTACCTAAA AGTGAGAACA TGCAGTGTGTT GATTTTCTAT CCTTGTGATA
11501 GTTGCTGTAG AATGACTGTT TTCAGCTTCA TCCATGTCCC TCAAAAGGAC
11551 ATGAACTCAT CCTATTATAT GGCTGCATAG TATCCATGG TGTATATGTG

FIGURE 3D

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

11601 CTACGTTTTC TTAATCCAGT CTATCACTGT TGGACATTTG GGTGTTCC
11651 AAGTCTTTGC TATTGTGAAT AGTGCTACAA TAACCATATG TGTGCATGTG
11701 TCTTTATAGC AACATGATTT ACTATCCTTT GTGTACATAC CCAGTAATGG
11751 GATAACTGGG TCAAATGGTA TTTCTAGTTC TAGATCCTTG AGGAATCCCC
11801 ACACTGTCTT CCACAATGGT TGAACATAAT TACATTCCCA CCAACAGTGT
11851 AAAAACGTTT CTATTTCCCC ACATCCTCTC CAGTATCTGT TGTTTCCTGA
11901 CTTTTTAATG ATGGCCATTC TAACTCACAT GAGATGGTAT CTCATTGTGG
11951 TTTTGTGTTG CATTTCTCTG ATGACCAGTG ATGATGAGCA TTTTTTCATG
12001 TGCTTTTGG CTGCATAAAT GTCTTCTTTT GACAAGTGTC TGTTTCATATC
12051 CTTTGCCCAT TTTTCAATGG AGTTGTTTGT TTTTTTCCTG TAAATTTGTT
12101 TAAGTTTCATT GATATTCTG GATATTAGCC CTTTGTGAGA TGGGTAGATT
12151 GCAAAAATTT TCTCCCATTC TGTAGGTTGC CTGTTACACC TGATGGTAGT
12201 TTCTTTTGCT GTGCAGAAGC TCTTTAGCTT AATTAGATCC CATTTGTCAA
12251 TTTCGGCTTT TGTGCCATT GCTTTTGGTG TTTTAGTCAT GAAACCCTTG
12301 CCCAGGCCA AGTCCTCAGT GGTATAGCCT AGGTTTTCTT CTAGGATTTT
12351 TATGGTTTCA GGTCTAACAT TTAAGTCTTT AATCCATCTT AAATTAATTT
12401 TTGTATAAGA TGTAAGAAGG GATCCGTTTC AACTTCTAC ATATGGCTAG
12451 CGTGTTTTCC CAACACCATT TATTAAATAG GGAATCCTTT CTCCATTTCT
12501 TGATTTTGTC ATATTTGTCA AACATCACAT GGTTAGAGAT GTGTAGTGTT
12551 ATCACTGAGG CCTCTTTTCT GACTCCATTG ATCTATATAT CTGTTTTGAT
12601 ACCAATACCA TGTGTTTTTC GTTACTGCAA CTTGTAATG CAATTTGACA
12651 TTCAGGACCA TGATGCCTCC AGTCTCTTTT TTTTTTCTA AATAATTTTT
12701 TTGTCAATGT AAGCTCATTT TCGCTTCTTT CTGATCCATA AAGTATTTTT
12751 TTCCCATTTT GTGGAGAAG CCGCNNNNNN NNNNNNNNNN NNNNNNNNNN
12801 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNGGCACA CCTCGTGCGC
12851 ATATATATAT ATATATATAT ATATACCTCT ATATATATAT ACATACATAC
12901 ATACATACAC ACCTCCTTGT CTGGTGTGGG ATCAGGGTAA TGCTAGCCTC
12951 ACAAGATGAT ACTGAAGTGT TTTTGCCTTT TTGACTTTTT GATGGTTTGG
13001 AAGAGTGAGA AAAAGTGTTA TTAATTATTC TTTAAATTTT GTTGAATTTT
13051 ATAGTGAAGA CCTTAGCTCA CTGGCTTTTT TAATGAGAAC TTTATTACTG
13101 ATTTAAACTT CTCTTCATT ATTTATTTCT GCCTTGTTTT TATTCTTCA
13151 TAATCCAGTC CTATTTTATG TGTCCACTAA ATTGTTTATT TTCCTAGAAT
13201 TTTTCCATTT ATTGGCATAT GCATGTCCAT AGAAGCCTTT TATAGTCCTT
13251 TTCAATTCTA GTGTCATTTT TTTCCTTTTT TTTAAGAATC CTTAAGATTT
13301 TAGAGATGAA ATGTCACTTT GTTACGCATA CTGGAGTGCG GTGACATTAT
13351 TATAGCTCAC TGAAACCCAA ACTCCTGAGT TTAAGCAATC CTTCTACCTC
13401 AAAATTCCAA AATTCCAGT TAGCTGAGAC AGGCATACAC CATCAAGACT
13451 GGCTAAATTTA TTTCAAATTT TGTAGAGATG GGTCTTACT AAGCTATTCT
13501 CAATCTTTGG GCTTCAAGTG ATTCTTCAGC CTCTGTCTCT GAAAATGCTG
13551 GGTTTATAGA TATGAGCCTC TATGCCTGAT TTGCTTTGTC TCTTTGTAAT
13601 CTCCCATTTT ATTTGTGTCT TTTCTGGTTT GTTTCATTTT GTTATGTTTT
13651 CAGTTACCTT GCTAAAGCTT TGTCGATTTT ATCTCTTCAA ACAACTAACT
13701 CAATATTTTG CTGATTTTCC ATATAGTATT TTATTTCTAT TTCATTTATT
13751 TCTGCTCTAA TCTTTGTTAA ATATCTTGTT TCCTAATAA TTTTGAGTTT
13801 CCTGTCTCTT GTTTTCTAAT TCCTTGCGAT GTTATCATAA ATTGTTTATT
13851 TGATATCTTT CTACTTTTTT GATGTGTGTG TTCGTTGTTG TAGACTTTCC
13901 TCTTTATTAT TCTGATTTCT TCCTCAATTC TCTAATATTA TGATTGCATT
13951 ATTTTCCAAG TTTCTTTTGT TTTTTTATTT ATAGTTTATG TGATTCCCTGA
14001 ACTTGTCAAA GAGATTATTG TGAATTTGAT GTCGGATATT TAAGCATTTT
14051 CAAAACCTTT GGTGCATTAT TGAAATTTTA TTGGTTTATT TTAGAGATGT
14101 CATACTTTCC AGTTTTTTTT TAACAATACT TGCTCTTTAT ATTGATGTCT
14151 ACATATTTAA AAAGATAACC ACCTGATTCA GCTTTTTAAG GTGATATGCA
14201 GTGGTGTTAA GTGTGTACTG CTTAATATCA GAGCTGAATC ACTGCCCTGA
14251 GGATTCTTTC TGTCTGAGG AGAGCTTGTA GTTAATAGCA GAACCTAAAT
14301 AGTGCAGTAG AGCTAAATCT CTTCCATGCT GTTGTTTTCC TGTCTGGGGA
14351 AGACTTATCA TGACCATGAA AACATAATGC TGTGCCAGAA CTTAAACCCA
14401 AACCTGTAGT AATTTCTGAG TTGAGGAAGG CTTAAGAAAT AACTGGAAC
14451 TAGTTACTAA CCTGATAGTT GTTCTGAGT CAGAGAAATG CTCTGCATGA

FIGURE 3E

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

14501	TCACCTGGGA	TATTTGTAAA	ATCTAACCAA	AGATTCTAGC	CTTCCCCTTG
14551	GATTGTGCCT	CCTGTACTAC	TGTAGTGCTG	GCTAGGTCCT	CATCAGTGAA
14601	TTCCCTGCTG	ATAGGACCAC	AAAGCATCTG	CCAAGATCTG	TTTGCCATTT
14651	GCTGTGATTA	GTGCTTCTGC	TCTTTGCTTC	CAATTCAACT	CAGGTGGTTC
14701	AGCCCTTCTG	ACACTCCTAA	TACCTCCTGT	GGGATGGAAC	ATAGAAGGCT
14751	TCTCACAATG	ATTCACACAC	TGATATGGAG	ATTGAATGTC	CAGTTGCAAC
14801	TATTTTCTTC	CACCTGTGTA	ATTGCAGGTA	CAGGGAAGTT	TTCTGTGACT
14851	GATGCTATTT	TGGTTTGGAG	AATGGGGTGA	TGTGGCACAA	TGATCTTTCT
14901	TC'TTCTGGT	CATGGATTTT	TTAATTTCCA	TGAACCCATA	AGATTTTTC
14951	CTTTTCTTCT	GAGCTCTGGT	GCTTTCAGAG	TGGTATTTT	ATATTCGAAT
15001	AACCTTTTATT	TGAATTTTGA	AAAGCGATTG	ATGCTGGAGG	TCTTCTATTC
15051	CACCATCTCG	CTGATGTCAG	TCCTCAAATA	ATAATTTTAT	ATTTTAGCAA
15101	ATTATTTTGG	TTTTAGGATT	TTGTGTCTAC	GTGACACAGA	CATGAAAAGA
15151	GATGTACTCA	TTACTGAAAC	TTTTTGCATA	CTGTTTGGT	TGTGCGCCTT
15201	TTCTAGTATG	AATGATTACA	TATTTAAGCC	ACATGTTTTA	TACATAGACT
15251	GTCCTTTAAA	GAGACTAGAT	AGTCTGTGT	GTCAGCATAT	AGGGACAGAA
15301	TATAACTACA	CATTAATAAT	TTCTCAAGTA	TTTATTTTAG	AAGTGTAAGT
15351	AACCTTTTATT	TTAATTTTGG	TTATATTATG	CCTCTGTAAT	GCAGATAAAT
15401	TTTTATCTTC	AGGAAATGGA	AAATTTTGTC	CAGAGTTCAG	GGGAAGATGG
15451	TATTGTGGTG	TTTTCTCTGG	GGTCACTGTT	TCAAAATGTT	ACAGAAGAAA
15501	AGGTAATAT	CATTGCTTCA	GCCCTTGCCC	AGATCCACAC	GAAGGTCAGT
15551	AAAACCTCCA	ATCCTGATAA	GCAGCTATTC	ACATAATGAA	ACAGTATGGT
15601	TTTATTTGGG	TCTTGAATCT	CATTTTCCAC	TTAGCATAAC	AGGTACCAAA
15651	ATTTGCAAAA	CATTATAGTA	GTGTACATGG	GCATACTGA	TCATTTGCCCT
15701	ACTGAGTCTT	GCTGTTACTG	GAAACAACCT	TCTTGATTGT	CATTTGTTTA
15751	TAATAAAATA	GATATAATAA	ATAAAGCTCT	ACCTTATATT	TTAGGATTTG
15801	AAATCTAAAA	GCGTGTGCCA	ATGATTCCAA	AAAAAAATTC	TGACATCTAT
15851	TATTTCAAAG	GACCAGAAAA	AGGAAAACCTG	ATATAAAAAA	AAAAAGAAGA
15901	ATCAATCTCA	AGAATATCTT	CTCATATTTG	TGTGTATAAA	AACGTGATTC
15951	AGGGTAGTTT	TGCTTAGAAA	TAAAAGCTCA	GATTAATGTA	GTCTTTCATA
16001	ATAATTAGAA	GTTTCAAAAAG	TAAAATGTCA	ATTACAATTA	TAGTATAGTA
16051	ACAATTATTT	AAGTAATGTA	ATTATTTATG	ATACTCCACT	AATTTTAACT
16101	TTATTATTAC	TGTAATTCTA	GAATTTTACA	CTTTAGATAG	TGCTATATAT
16151	AAACTATCCA	AAAGATATTT	CATTTTATAT	TTAGCTAAAA	TACTTCAAAC
16201	TCAATAAAGG	CAAGCATACT	AATTAGGAAT	TTGAAATATT	GTAATTTCAA
16251	TTATGAAATT	ATCTGTTAAG	TAGTTTGAAA	CATCTATGCC	GTTCTTTGTT
16301	TTCAAATGTA	TAAAATTTGT	ATAGGTGTCC	AACAAAGAAA	AATTGTGTAA
16351	AAAAAAGGTA	CAATCTCAAA	GAAAATTTAT	CATTGAACAG	TGGAACATAA
16401	GTAATTTTCT	AGCTCATTCT	TCTTCAATAA	AACAATTAAA	TATAAGAAGA
16451	AAGAGGCCAG	GAAGGAAATA	GAGAAGAAAA	GACACCCGAT	TATCCAAAAG
16501	ACACACATAA	TTGAAAACAA	ATTTTATCT	GCAGGGAAC	GTAAATTTGA
16551	TGGTAGAATG	AGATTGGCTC	CATGAGTTAA	AATGACACAC	AGATCAGGTA
16601	CTTATAAAAT	TTTTAATTCT	TATATAAAAA	TAGATTAGCC	ACTGCTGAAT
16651	TATTTTTTTA	AATATTCAC	GGTATTCTCA	TTCTCAAATA	TTTTTAATTG
16701	GTAATAAAAT	AATAATAGCA	TACCTAATAG	GCAACTGGTA	CACATTATTT
16751	TAAAAGATCT	TTGTAAAACG	TCCTACTATA	TCTTTCAGTC	TTTACGCGGT
16801	AGCTCTACAC	ACCCCTGTCT	CAACCATCAC	CTGAAGTACA	ATGAGTTTAT
16851	AATTTATAAC	TATATCTACA	TCCTTAGAAT	GCTAATATCC	TGTGGTTTAC
16901	TCTGTGAAAT	ACATGTGTTT	CTTCCGTAGG	TGTTATGGAG	GTACAAAGGA
16951	AAAAAACCAT	CCACATTAGG	AGCCAATACT	CGGNNNNNNN	NNNNNNNNNN
17001	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNAAAAAA
17051	AAGACCCAAT	CCCAAAGAAA	ATTTATCATA	GAACAATGGA	ACATAGGTAA
17101	TTCTCTAGCT	CATTCGTCTT	CAATAAAACA	AATAAATATA	AGAAGACAAA
17151	GGTCAGGAAG	GAAATAGAGA	AGAAAAGATA	ACCGATTATC	CAAAATCACA
17201	CACAAAATTG	AAAGCAAATT	TTATCTGTGG	GGAACGTGTA	ATTTGATGGT
17251	AGAACCAGAA	TAGTTCCATG	ATTTGAAATG	ACACAGAGAT	CATGTACTTA
17301	TAAAATATTT	TATCTTTATA	AGAAAATTGA	GTAGCCAGTG	CTGAATTACT
17351	TTTTAATGAT	TCACTGATAT	TCTCATACTC	AGATATTTTA	ATTGATATTA

FIGURE 3F

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

17401	AAATAATAAT	AGTATACTTA	ATAGTCAACT	GGTACACATT	ATTTGAAAGG
17451	ACTTTTGTAA	AAAGTCCTAC	TATGTCTTTT	ACTGTTTACA	CAGTACCTCT
17501	ACATACCCCT	GTCTCAACCA	ACACCTGAAG	TACAATGAGT	TTATAATTTA
17551	TAACTATATC	TACATCCTTA	GAGTGCTAAT	ATCCTGTGGT	TCAATCTGTG
17601	AAATACATGT	GTTTCTTCCA	TAGGTGTTAT	AGAGATACAA	TGGAAAAAAA
17651	ACCATCCACA	TTAGGAACCA	ATACTCGGCT	GTATGATGGG	ATACCCCAAG
17701	ATGATCTTCT	TGGTAGGTCT	ATGAGAAAGT	AAAAATATGA	ACTAGACGAG
17751	GAAAAAATGA	ATAAATGTTA	AACAGCAAGC	AAATTCAGCA	AAGATCTAAA
17801	ATTATAAAAC	TTTATTTTAC	TTACTCTTTT	GAAGCAGATA	TAATTAAAGG
17851	ATTGACTAAA	ATTGTATAGA	TTACACCTTT	CTATTGTTAA	GGTGAGAGTG
17901	ACAGGAAATT	CAGAAGGAAT	TAATGCCTAT	TTTCTGGAG	ATAGAAATGA
17951	TCTTTAGTAG	CAATGCTCCA	TGTGCTCACC	TTCTAAAGAA	AGTGCTGTAC
18001	GCTTCAGTGA	GTTATCTCGT	AATTCCTATC	TGTAGTTTTT	AAATAATTTT
18051	AAAAGTTTAG	AATAAAATAT	CTCACCATT	CTCATCCAAT	TTACATACCTA
18101	GGTCATCCCA	AAACCAAAGC	TTTATCACT	CATGGTGGAA	TGAATGGGAT
18151	CTATGAAGCT	ATTTACCATG	GGGTCCCTAT	GGTGGGAGTT	CCCATATTTG
18201	GTGATCAGCT	TGATAACATA	GCTCACATGA	AGGCCAAAGG	AGCAGCTGTA
18251	GAAATAAACT	TCAAAACTAT	GACAAGCGAA	GATTTACTGA	GGGCTTTGAG
18301	AACAGTCATT	ACCGATTCCCT	CGTAAGTACT	ACTGCTTGTA	CAGACTGATC
18351	TAACATTGAC	TATGTTATAC	ATTATACCAG	AAAATGTTAA	ATATCATCCT
18401	GGTAGACATG	TTGAGGGATT	TTACTCCACA	ATATTGAGTC	ATTCATCACC
18451	TTGTTACTGG	AATAGTTGTG	GAAATTGTAG	TTCATAGAGT	GTCAAACTTT
18501	CTTCATGGAA	ATATTAGGTT	TAAGTTAACA	ACTGGCTTAC	TAAGCTTTTA
18551	TTCACATCTT	AATTTTACCC	CATTTTGTTA	AGAATATACT	CTTTCAGTCT
18601	CTCCACTATA	TCTGTTTAAT	ACTATGTAAC	CAACAATATT	CATGTCACAA
18651	CCAGAATCAA	TCTTTTACTG	AACATGTTCT	TGGCTTGCA	AACATATACT
18701	ACGGTTTATC	TACGTGTCTT	TTATGAAAAC	AAAAGTACAA	CTTCTAAGT
18751	TCATGTGTG	TTTTTCCCTT	CCAGTTATAA	AGAGAATGCT	ATGAGATTAT
18801	CAAGAATTCA	CCATGATCAA	CCTGTAAAGC	CCCTAGATCG	AGCAGTCTTC
18851	TGGATCGAGT	TTGTCATGCG	CCACAAAGGA	GCCAAGCACC	TGCGATCAGC
18901	TGCCCATGAC	CTCACCTGGT	TCCAGCACTA	CTCTATAGAT	GTGATTGGGT
18951	TCCTGCTGAC	CTGTGTGGCA	ACTGCTATAT	TCTTGTTTAC	AAAATGTTTT
19001	TTATTTTCTT	GTCAAAAATT	TAATAAACT	AGAAAGATAG	AAAAGAGGGA
19051	ATAGATCTTT	CCAAATTCAA	GAAAGACCTG	ATGGGGTAAT	CCTGTTAATT
19101	CCAGCCACAT	AGAATTTGGT	GAAAACCTTG	CTATTTTCAT	ATTATCTATT
19151	CTGTTATTTT	ATCTTAGCTA	TATAGCCTAG	AATTCACGA	TCATGAGGTT
19201	GTGAGTATAT	CTCATCTTTT	CGTGTATTTT	TCCTAGGTGT	CTTTACTCTC
19251	TTCTCTCACT	TTGTGACACA	AGGACATGAA	TACATCTAAA	TTTTCTTATT
19301	TCTGATATGA	CTGTTTTGAT	GATGTCATTA	CTTCTATAAC	CTTAAGTGAT
19351	AGGGTGACAT	GCAATATGAT	TATTCCTGGT	GTGCGCCCAA	ACACATGGAT
19401	ATAAAGAGGT	AAAAAACTTA	AAATTCACAA	AATTCAGTAA	ACCACACAAA
19451	TCAGGTAAGT	GTTCTATGAG	ATTAGCTGGC	TATGAGAAAC	ATAATGATGT
19501	TTCTTTTTC	ATTTAAATAA	GCCCTTCTAC	ATAGCCAGCA	TCAGTGATCT
19551	CAGAAAATAA	ATTGCTAATA	ATGATGACAT	GGCATTATGC	TTAGAAAAGT
19601	TTGCTGTATT	TCCATAGACC	TCATCTAGAT	GTCATGGCCT	ACATTTCTGC
19651	CATCACTCAA	CCAATACTTT	TTTCTGTTTT	CTTGATGATA	AAAAGACCTT
19701	TCTCATGATT	GCCATCAAAT	AACAAAAGAA	ACTATTTTTT	TTCTCACATA
19751	GAGAACATGT	CAGTAAGATA	TTCAAGGTGA	ACAGATATTT	TTGGGATTAG
19801	TAACTATTTG	AAATATGTGG	TGATAATTAC	TGAGTTTATA	AAATTTATTT
19851	GATAGTACAC	TTAAAGAAGA	TTTATATGTT	TATTCCTTAA	AAATGATGAA
19901	TACTCATAAT	TCTTATCTCT	ATAATCAAAA	GTATAATTTA	CTGTAGAAAA
19951	ATAAAGAGAT	GCTTGTTCTG	AAAGTAAGAT	CAGTGAAGTG	CTTTTCAGTC
20001	TCAATCTTTG	AGAATTGTAA	ATTCATCAAA	TAATTGCTTA	CATAGTAAAA
20051	ATTTAAGGTA	TTAGAAAACC	TGCATAACAA	ATAGTATTAT	ATATTAAATA
20101	TTTTGATATG	TAAAGCTCTA	CACAAAGCTA	AATATAGTGT	AATAATGTTT
20151	ACACTAGTAA	GCAAATATGT	TAATCTTCTC	ATTTTTTTTAC	TGTCATATAA
20201	TCCTAGTGAT	ATGCCTATTA	ATAGTTTAA	ATAAATAAAT	TGGCTTATCT
20251	GGCTTTTTGA	AAATTTTGAA	ATTCTTACAG	ATGTTGATTA	GGTATATCTA

FIGURE 3G

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

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20301 CAAATTAATT TCAATTTTAA AATGATGATA TAAAAATAAA TATAAGTATT
20351 TTTCTTGTGT ATGTATACAA TAAATATAAA TAAAATTGTT TACTGTTTGT
20401 AAAGTTTCTT AAGTTTTTAC ACTGATATGT TTTTGGACTT TTACAATATT
20451 ATTATAATCT AGGAAAAGCT GATTATATCT GTTTTAAGCC TCATCTTTTC
20501 TCTGTAATTA AACACAGTAA TTTATTAACA TGCTGTGACA GGTGGGAAGC
20551 CATTTCTGGA GTTGAGCCTG CTGACACTCT GGAGCTTTTT AGGTTGGACG
20601 TTCATTGTAT GTGGGACTCT CTGCCTCTCG ATAGCTGTTG CTCATAAGAC
20651 TCTCCTTCAT CAATCTGGCA TTGAATTTTG CGATCAGTTG CAATCAGAAT
20701 CCAATTGGCC TTGCCGTTTT AGTATGTTCT ATCTTAACCA GCAATTTCTA
20751 ACCAGGAGCC TGCCCAGGTT TGTTCGTCT TCCCTGTAAG AAGCTCCCAG
20801 CATAAATATT CTAAATTTTA CACTACTAAT CTATTAACCA ACCTTTGGAC
20851 CATGTTCACT TTAGGTTGAG CATAGTGTGA TGAGATGCAA ATTAAATTAC
20901 AATCCTATAG GTGTGTGTTA TAAATTTTAA AGTGATATAA TTAAATAACA
20951 CATTCTAAGT ATCCAACAAA GGTCAAAAAA ATGATATAAA GTCACCAAAC (SEQ ID NO:3)

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FEATURES:

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Start: 197
Exon: 197-911
Intron: 912-6498
Exon: 6499-6647
Intron: 6648-15412
Exon: 15413-15544
Intron: 15545-16929
Exon: 16930-16940
Intron: 16941-17632
Exon: 17633-17712
Intron: 17713-18101
Exon: 18102-18321
Intron: 18322-18774
Exon: 18775-19051
Stop: 19052

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CHROMOSOME MAP POSITION:

Chromosome 4

ALLELIC VARIANTS (SNPs):

DNA			
Position	Major	Minor	Domain
1735	A	G	Intron
1922	A	G	Intron
2361	C	T	Intron
7371	G	C	Intron
9558	G	A	Intron
10579	T	G A	Intron
10625	C	T	Intron
11147	A	G	Intron
15131	C	T G	Intron
15221	A	G T	Intron
15778	T	C	Intron
15895	-	A	Intron
19786	-	T	Beyond ORF (3')
20157	G	A	Beyond ORF (3')
20246	T	C	Beyond ORF (3')
20681	C	A	Beyond ORF (3')
20819	T	C	Beyond ORF (3')

FIGURE 3H

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

Context:

DNA
Position
1735

TACTTTACTGATATACACCTATTTGACTTATTTTTATTTCTTTGCTTTACTGATAAAAAG
TTGTTTTGCTTTGCAATTTTCATATAGTTGTGATCAGAGCTGGTCAATGCAAGACATGTT
TTTATCCAAATATGTTTGAGAATTATGTAGAAACATGAAAAAGGTACAATTATATCCGA
CACTAAAAATATTGTTTAAATGTATTCCAACGAATTC'TTATGCATAGACTGTTTCACAGAAC
TAATATTCAGAGGATCCCAGTTCAAATGTCCTTAGCCTTAGACATGATTGAATTTACAT
[A, G]
TATTGATTGCTTTAAATAATTTTCCATTTCAGTAAGCTGTGCCTAGCTGCAGATAGCCTA
CCAGGCTTTATGGATCTAGGTAAACAATACAAATCTCTTGGCCTCAAGTCTACATTCAGA
TATTAATTTAAAGGGGTACAGCTATATAGAGGTCACTGGCAAATTTTGGTAAAAATAGGAT
TATAGTAAAGCCCCCTGACAAGATTGAAATTTAAATAAAAACAAAAGTGTATCAAAGG
GGTGAAGAGCATT'TTCCAATAAACAAAAGTGGGTTC'TGGCCATGCATTTCAGAAATCCCCAACAAT
1922 ATATTGTTTAAATGTATTCCAACGAATTC'TTATGCATAGACTGTTTCACAGAACTAATATT
CAGAGGATCCCAGTTCAAATGTCTTAGCCTTAGACATGATTTGAATTTACATATATTGA
TTTGCTTTAAATAATTTTCCATTTCAGTAAGCTGTGCCTAGCTGCAGATAGCCTACCAGGC
TTTATGGATCTAGGTAAACAATACAAATCTCTTGGCCTCAAGTCTACATTCAGATATTAA
TTTAAAGGGGTACAGCTATATAGAGGTCACTGGCAAATTTTGGTAAAAATAGGATTATAGT
[A, G]
AAAGCCCCCTGACAAGATTGAAATTTAAATAAAAACAAAAGTGTATCAAAGGGGTGAAA
GAGCATT'TTCCAATAAACAAAAGTGGGTTC'TGGCCATGCATTTCAGAAATCCCCAACAAT
TCTTTAAATAATCATGGAGCAGCTTGATATATAAGAAATTCATTTAATAACTATATTTATT
ATGTAGCTCCAACCTTACTAAATTATTGATTATTATATATTTTATAGAATTATCTATTGTG
AGTCTAAATCAAGAGTATATATTCAAACAACCTATAGGAAAAGGGATATCAGTCAATTTCA
2361 CAGCTTGATATATAAGAAATTCATTTAATAACTATATTTATTATGTAGCTCCAACCTTACT
AAATTATTGATTATTATATATTTTATAGAATTATCTATTGTGAGTCTAAATCAAGAGTAT
ATATTCAAACAACCTATAGGAAAAGGGATATCAGTCAATTTCAATTCAGGATTTATTTCC
ATAAGTGCTTACGCACAGGTGTATTTCAATTTATTATACATTGCTTTATTGTCTTCACA
AAAATTGCAATTTACAAATTAAGGTTTTTGAACCTTGAATCAAGCTAATCAATTTGG
[C, T]
GTAATATTTCCAACAACAAGTGTGTACTTTTGACTCTATCACATATTGGCATTATCATG
CTTTTCAAATTTTTCATTGTATATCTGTACGGTGATCTGGGATCAGTGTCTCTTGAT
GGTTACACGTTTATTAGCTTGGGGGCACCTTGATGTGTTACAATATAAGACAGCAAACCT
AATTATAAATGTTGTGCATGTACTAAGTCTCGCTGATTCGTTTCCCCATCCCACCTCT
TCTTAGGCCTCCCTATTCCTTGAGACACAGTAATATAACATACAATGACTTCTAAATGTT
7371 AAATAAGTGATGAAGGAAGACAAAGAATAAAAGAAAATTTCAATAAATGGAAAGTTTAAG
TGTTTAAATGATAGTGATGACTTTTACTCAAATAAGTGCTTAGAAGTCATCTTGTGTTGA
TTTATATGATGAATTCGTGTTGTGACTATCCACTTTGAGCTCGTGAGAATGTTAGGTGA
GGTTTAAATAAAAGCCATTTGAGAAAAACAAGGTTTCAACCTCTGTGGACAGAAATCTAAA
TATCGATAGTTATCAGGACAAAGTAGAGCTCATAGAAATAATTTTGCAGCCTGCAGGTTT
[G, C]
TTTTGGAGTGAAAATAAAATGTATACTATATTCCTAAATCATCAGAGGAAAAAATTTAT
AGTTCAAGGAATGTTGAAAGAAACAATATTGAGAAGTAAAGTGAGTAATAGTTGTTATA
GTTTTTTAATAGTTTTGTAAAGTATGCTTGAGTTCAGTGTCCCAAAGTGGCTATTAGCT
CTAGCCTTGACCTGACAAGGTTCTAGGATATTTAGTCATGGATGTTTCATAATCTACCTCT
TACGGGATACTTTTTATTCTGATGAACAGCCTAATGCCTAAGTGTGCAATCTATACCAAG
9558 TCCACATATAAGGGATACCATGCTATCTCTGCCTGGATTATTTTCAGTTAACATTATGCCC
TGGAGGTTTCATTCATGTTTCTACAAATGACAGGATTTCAATCTTTTTTTTCCAATATATA
TTTAAATGAAATGGATATATATAAACATTGGAAAATGTATATATATATATATCTCCAGT
GGAATGCTATTGAGCTATAAAAAAGTTAATATATAATAGAAATAAAGCTTATATATATCT
AATGGAATGGATATATATATATAATGGAATAGAAATATATATCTATACATATAAACACAC
[G, A]

FIGURE 3I

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

CAATATACATATCCATTTTCATTGCATATATATATATATAGAGAGAGAGAGAGAGATAT
TTTCAAATGTGTATATATATCCAAATGGAATGGACATATATATATGTATATTTTTTCCA
TATTTTCTTTATGTATTTCTTCATTAATGGATGTTTAGGTTGATTTCATCCCTTGGGTATA
TGAATAATGTGTATGTAAACATAGAAGGACAGATATCTCTATGACTTCTTAGTTTATTTA
AATATACACCCAGTAATGGAAATGCTGTATAATATGGTAGTTCTATTTTCATTTTTTGAG

10579 CAATGCTTTGATATAACCCATTTATCTACTTTTCCTTTTGTGGCTGTGCTTCTGAAGTC
CTATCCAAAAAATCCTTGCCCTAGACCAATGTCACAAATCATTCCTCCTACAGTTTCTTC
TAGTAGTTGTATAATGTTTGGCCTTATATTTAACTTTGTAATTCATTTTACTTTACTTTG
TATATGGTGAGGGATAGAGGTCTAGTTTCATTTTCTGCATGTGGATATGCAGTTTTCCTA
GCACCATTTAGTGAAGAGGTTGCCTTTTTTCTATTATGTGTTCTTGGCACCTTTGTCAAA
[T, G, A]
GTCAGTTAGCTGCTATATTCCTCCATTTGTGTTGTTATAGAGGAACACATGAGACTAGCA
AATTTATATATCAAATAGAATTATTTGAATGATAGTTCTGCATACTGTACAAGAAGCACA
GCACTGACTTCTGCTTGGCCTCTGGTAAGGTTCTCAAGATGCTTCCACTTGTGGTAGAAG
GCAAACATGAGCTGGTATATGCAAAGGTCCTATGACAAGAGAGGAAACCATAAAGAGGGG
ATGTGAGGGAGTGCCAGGTTTGTAAACAACCTAGCTCTTCTGGGAACCTAATAGAGTAAA

10625 GTGCTTCTGAAGTCCTATCCAAAAAATCCTTGCCCTAGACCAATGTCACAAATCATTCCT
CCTACAGTTTCTTCTAGTAGTTGTATAATGTTTGGCCTTATATTTAACTTTGTAATTCAT
TTTTACTTACTTTGTATATGGTGAGGGATAGAGGTCTAGTTTCATTTTCTGCATGTGGAT
ATGCAGTTTTCCTAGCACCATTTAGTGAAGAGGTTGCCTTTTTTCTATTATGTGTTCTTG
GCACCTTTGTCAAAAGTCAGTTAGCTGCTATATTCCTCCATTTGTGTTGTTATAGAGGAA
[C, T]
ACATGAGACTAGCAAATTTATATATCAAATAGAATTATTTGAATGATAGTTCTGCATACT
GTACAAGAAGCACAGCACTGACTTCTGCTTGGCCTCTGGTAAGGTTCTCAAGATGCTTCC
ACTTGTGGTAGAAGGCAAACATGAGCTGGTATATGCAAAGGTCCTATGACAAGAGAGGAA
ACCATAAAGAGGGGATGTGAGGGAGTGCCAGGTTTGTAAAAACAACCTAGCTCTTCTGGGA
ACTAATAGAGTAAAAATTCGCCTCCCAGGCAGGGGATTAATCTATTCATGAGGGATCTGC

11147 ACAACTAGCTCTTCTGGGAACCTAATAGAGTAAAAATTCGCCTCCCAGGCAGGGGATTAAT
CTATTCATGAGGGATCTGCTTCCATGACAAAGGCACATTCGTAGATTCTACCCCCAAT
ATTGGGGATCAAATTTTAAACATGAAGTGTGGAGGGCTCAAATATCCATACTATGGCAGCA
GTAAATGCATAAATTTATTTGTGGATCTCTATTCTATATAGTATTGGTGTATGTATCTG
TTTTCATGCCACTGCCATACTGTTTTTGGTGATGATATCTATGCTATATATGTGTGTGTG
[A, G]
TATATATATATATATATGTATATATGTGTATATTATATATATGTATATATGTGTATATT
ATATATATATAATACTTTAAGTTTTATATATATATAAAATACTTTAAGTTCAAGGGTACA
TGTGCAGGATGTGCAGGTCAGTTACATAGGTATACATGTGCCATTTTGGTTTGCTGCATG
CATCAACTCATCATTACATTAGGTATTTCTCCTAATGCTATCCCTCCACCAGCCACCCAA
CCCCAACAGGCCAGGTGTGTGATGTTCCCCGCCCTGTGTCCATGTGTTCTCATTGTTCA

15131 CAGGGAAGTTTCTGTGACTGATGCTATTTTGGTTTGGAGAATGGGGTGATGTGGCACAA
TGATCTTTCTTCTTCTGGTCATGGATTTTTTAATTTCCATGAACCCATAAGATTTTTCA
CTTTTCTTCTGAGCTCTGGTGCTTTCAGAGTGGTATTTTTATATTGCAATAGTTGCTAGT
TGTACTTTTAAAGCGATTGATGCTGGAGGTCTTCTATTCACCATCTCGCTGATGTCAG
TCCTCAAATAATAATTTTATATTTTAGCAAATTATTTTGGTTTTAGGATTTTGTGTCTAC
[C, T, G]
TGACACAGACATGAAAAGAGATGTACTCATTACTGAAACTTTTTGCATACTGTTTTGGTT
GTGCGCCTTTTCTAGTATGAATGATTACATATTTAAGCCACATGTTTTATACATAGACTG
TCCTTTAAAGAGACTAGATAGTTCTGTGTGTCAGCATATAGGGACAGAAATAACTACAC
ATTAATAATTTCTCAAGTATTTATTTTAGAAGTGTAAGTAACCTTTATTTTAATTTTTGT
TATATTATGCCCTCTGTAATGCAGATAAATTTTATCTTCAGGAAATGGAAAATTTGTCC

15221 TTAATTTCCATGAACCCATAAGATTTTTCACTTTTCTTCTGAGCTCTGGTGCTTTTCAGAG
TGGTATTTTTATATTCGAATAGTTGCTAGTTGTACTTTTAAAAGCGATTGATGCTGGAGG
TCTTCTATTCCACCATCTCGCTGATGTCAGTCCCTCAAATAATAATTTTATATTTTAGCAA
ATTATTTTGGTTTTAGGATTTTGTGTCTACGTGACACAGACATGAAAAGAGATGTACTCA

FIGURE 3J

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

TTACTGAAACTTTTTGCATACTGTTTTGGTTGTGCGCCTTTTCTAGTATGAATGATTACA
[A, G, T]
ATTTAAGCCACATGTTTTATACATAGACTGTCCTTTAAAGAGACTAGATAGTTCTGTGTG
TCAGCATATAGGGACAGAATATACTACACATTAATAATTTCTCAAGTATTTATTTTAGA
AGTGTAAGTAACCTTTATTTTAATTTTTGTATATTATGCCCTCTGTAATGCAGATAAATT
TTTATCTTCAGGAAATGGAAATTTTGTCCAGAGTTCAGGGGAAGATGGTATTGTGGTGT
TTTCTCTGGGGTCACTGTTTCAAATGTTACAGAAGAAAAGGCTAATATCATTGCTTCAG

15778 GTTTCAAATGTTACAGAAGAAAAGGCTAATATCATTGCTTCAGCCCTTGCCAGATCCC
ACAGAAGGTCAGTAAAACCTCCAATCCTGATAAGCAGCTATTCACATAATGAAACAGTAT
GGTTTTATTTGGGTCTTGAATCTCATTTTCCACTTAGCATAACAGGTACCAAATTTGCA
AAACATTATAGTAGTGATGTCATGCGCATACTGATCATTTCCTACTGAGTCTTGCTGTTA
CTGGAAACAACTTCTTGATTGTCATTGTGTTTATAATAAAATAGATATAATAAAATAAGC
[T, C]
CTACCTTATATTTTAGGATTTGAAATCTAAAAGCGTGTGCCAATGATTCCAAAAAAT
TCTGACATCTATTATTTCAAAGGACCAGAAAAAGGAAACTGATATAAAAAAAGAA
GAATCAATCTCAAGAATATCTTCTCATATTTGTGTGTATAAAACTGTATTCAGGGTAGT
TTTGCTTAGAAATAAAAGCTCAGATTAAATGTAGTCTTTCTAAATAATTAGAAGTTTCAA
AGTAAATGTCAATTACAATTATAGTATAGTAACAATTATTTAAGTAATGTAATTATTTA

15895 TATGGTTTTATTTGGGTCTTGAATCTCATTTCCTACTAGCATAACAGGTACCAAATTT
GCAAAACATTATAGTAGTGATGTCATGCGCATACTGATCATTTCCTACTGAGTCTTGCTG
TTACTGGAAACAACCTTTCTTGATTGTCATTGTGTTTATAATAAAATAGATATAATAAATA
AGCTCTACCTTTATATTTTAGGATTTGAAATCTAAAAGCGTGTGCCAATGATTCCAAAAA
AAATTCTGACATCTATTATTTCAAAGGACCAGAAAAAGGAAACTGATATAAAAAA
[-, A]
GAAGAATCAATCTCAAGAATATCTTCTCATATTTGTGTGTATAAAACTGTATTCAGGGT
AGTTTTGCTTAGAAATAAAAGCTCAGATTAAATGTAGTCTTTCTAAATAATTAGAAGTTTC
AAAAGTAAATGTCAATTACAATTATAGTATAGTAACAATTATTTAAGTAATGTAATTAT
TTATGATACTCCACTAATTTTAACTTTATTTACTGTAATTCTAGAATTTACACTTTA
GATAGTGCTATATATAAACTATCCAAAAGATATTTTCAATTTTATTTTAGCTAAAATACTT

19786 GAAACATAATGATGTTTCTTTTCAATTTAAATAAGCCCTTCTACATAGCCAGCATCAGT
GATCTCAGAAAAATAAATTGCTAATAATGATGACATGGCATTATGCTTAGAAAAAGTTTGCT
GTATTTCCATAGACCTCATCTAGATGTCATGGCCTACATTTCTGCCATCACTCAACCAAT
ACTTTTTCTGTTTCTTGATGATAAAAAGACCTTTCTCATGATTGCCATCAAATAACAA
AAGAACTATTTTTTCTCACATAGAGAACATGTCAGTAAGATATTCAAGGTGAACAGA
[-, T]
ATTTTTGGGATTAGTAACATTTTGAATATGTGGTGATAATTACTGAGTTTATAAAATTT
ATTTGATAGTACACTTAAAGAAGATTTATATGTTTATTCTTTAAAAATGATGAATACTCA
TAATTTCTATCTCTATAATCAAAAGTATAATTTACTGTAGAAAAATAAAGAGATGCTTGT
TCTGAAAGTAAGATCAGTGAACCTGCTTTTCAGTCTCAATCTTTGAGAATTGTAAATTCAT
CAAATAATTGCTTACATAGTAAAAATTTAAGGTATTAGAAAACCTGCATAACAAATAGTA

20157 ACACTTAAAGAAGATTTATATGTTTATCTTTTAAAAATGATGAATACTCATAATCTTAT
CTCTATAATCAAAAGTATAATTTACTGTAGAAAAATAAAGAGATGCTTGTCTGAAAGTA
AGATCAGTGAACCTGCTTTTCAGTCTCAATCTTTGAGAATTGTAAATTCATCAAATAATTG
CTTACATAGTAAAAATTTAAGGTATTAGAAAACCTGCATAACAAATAGTATTATATATTA
AATATTTTGATATGTAAAGCTCTACACAAAGCTAAATATAGTGAATAATGTTTACACTA
[G, A]
TAAGCAAAATATGTTAATCTTCTCATTTTTTTTACTGTATATAATCTTAGTGATATGCCTA
TTAATAGTTTTAAATAAATAAATTGGCTTATCTGGCTTTTTGAAAATTTTGAAATCTTA
CAGATGTTGATTAGGTATATCTACAAATTAATTTCAATTTTAAATGATGATATAAAAT
AAATATAAGTATTTTTCTTGTTATGTATACAATAAATATAAATAAATTTGTTACTGTT
TTGAAAGTTTCTTAAGTTTTTACACTGATATGTTTTTTGACTTTTACAATATTATTATAA

20246 GAAAAATAAAGAGATGCTTGTCTGAAAGTAAGATCAGTGAACCTGCTTTTCAGTCTCAAT
CTTTGAGAATTGTAAATTCATCAAATAATTGCTTACATAGTAAAAATTTAAGGTATTAGA

FIGURE 3K

Docket No.: CL000763
Serial No.: 09/784,340
Inventors: Ming-Hui WEI, et al.
Title: ISOLATED NUCLEIC ACID MOLECULES.....
REPLACEMENT SHEET

AAACCTGCATAACAAATAGTATTATATATTAAATATTTTGATATGTAAAGCTCTACACAA
AGCTAAATATAGTGTAATAATGTTTACACTAGTAAGCAAATATGTTAATCTTCTCATT
TTTACTGTCATATAATCTTAGTGATATGCCATTAAATAGTTTAAATAAAATAAATTGGCT
[T,C]
ATCTGGCTTTTTGAAAATTTTGAAATTCTTACAGATGTTGATTAGGTATATCTACAAATT
AATTTCAATTTTAAAATGATGATATAAAAATAAATATAAGTATTTTCTTGTGTATGTAT
ACAATAAATATAAATAAAATGTTTACTGTTTGAAGTTCTTAAGTTTTTACACTGAT
ATGTTTTTTGACTTTTACAAATATTATTATAATCTAGGAAAAGCTGATTATATCTGTTTTA
AGCCTCATCTTTTCTCTGTAATTAAACACAGTAATTTATTAACATGCTGTGACAGGTGGG

20681 TAAAATTGTTTACTGTTTTGAAAGTTTCTTAAGTTTTTACACTGATATGTTTTTTGACTT
TTACAATATTATTATAATCTAGGAAAAGCTGATTATATCTGTTTTAAGCCTCATCTTTTC
TCTGTAATTAAACACAGTAATTTATTAACATGCTGTGACAGGTGGGAAGCCATTTCTGGA
GTTGAGCCTGCTGACACTCTGGAGCTTTTAGGTTGGACGTTCAATTGTATGTGGGACTCT
CTGCCTCTCGATAGCTGTTGCTCATAAGACTCTCCTTCATCAATCTGGCATGAATTTTG
[C,A]
GATCAGTTGCAATCAGAATCCAATTGGCCTTGCCGTTTTAGTATGTTCTATCTTAACCAG
CAATTTCTAACCAGGAGCCTGCCCAGGTTTGTCTGTCTTCCCTGTAAGAAGCTCCCAGC
ATAAATATTCTAAATTTTACACTACTAATCTATTAACCAACCTTTGGACCATGTTCACTT
TAGGTTGAGCATAGTGTGATGAGATGCAAATTAAATTACAATCCTATAGGTGTGTGTTAT
AAATTTTAAAGTGATAAAATTAAATAACACATTCTAAGTATCCAACAAAGGTCAAAAAAA

20819 AATTTATTAACATGCTGTGACAGGTGGGAAGCCATTTCTGGAGTTGAGCCTGCTGACACT
CTGGAGCTTTTTAGGTTGGACGTTCAATTGTATGTGGGACTCTCTGCCTCTCGATAGCTGT
TGCTCATAAGACTCTCCTTCATCAATCTGGCATTGAATTTGCGATCAGTTGCAATCAGA
ATCCAATTGGCCTTGCCGTTTGTAGTATGTTCTATCTTAACCAGCAATTTCTAACCAGGAG
CCTGCCCAGGTTTGTCTGTCTTCCCTGTAAGAAGCTCCCAGCATAAATATTCTAAATTT
[T,C]
ACACTACTAATCTATTAACCAACCTTTGGACCATGTTCACTTTAGGTTGAGCATAGTGTG
ATGAGATGCAAATTAAATTACAATCCTATAGGTGTGTGTTATAAATTTTAAAGTGATAA
ATTAAATAACACATTCTAAGTATCCAACAAAGGTCAAAAAAATGATATAAAGTCACCAAA
C

FIGURE 3L